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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,025	07/20/2000	Ronald E. Pelrine	SR11P020/US-4184-2	3816
22434	7590	10/30/2003	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778			BUDD, MARK OSBORNE	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/620,025	Applicant(s) PELRINE ET AL.	
	Examiner Mark Budd	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-17,23-26 and 53-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-26 and 53-59 is/are allowed.
- 6) ☒ Claim(s) 1-8,10-17 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 1-8, 10-17 and 23 are rejected under 35 USC 112 as being vague and indefinite. The claim is confusing in that a so-called “finished portion” is further stretched prior to use. This would indicate it was not truly finished since the further stretching was required. In line 8, should “to” be deleted to make the claim read properly? The last clause calls for “a support structure for fixing the stretched finished portion of the polymer in place at the first area. If this portion is truly fixed, then it cannot deflect as called for in line 4 of the claim. Thus the claim appears to contradict itself. Because of these noted problems one cannot determine the met and bounds of these claims.

Claims 1-8, 10-17 and 23 (as understood) are rejected under 35 USC 103 as unpatentable over Pelrine in view of Scheinbeim, Lemonon or Ravinet (555).

Pelrine teaches the transducers structure using an electro-active polymer with appropriate electrodes. Pelrine teaches providing some pre-strain and teaches linear strains of up to 32%. Pelrine doesn't explicitly teach pre-stress of between 1.5 times to 50 times the original dimensions, and does not explicitly teach linear strain of 50% to 215%. However, each of Scheinbeim, Lemonon and Ravinet teach pre-straining a polymer 2-3 times its original dimensions to increase transducer output. This also means the (e.g. length) dimensions are stretched (linear strain) up to 300%. These values are all within the claimed ranges for the particular parameters. Thus, for the expected performance enhancement taught by Lemonon, Scheinbeim and Ravinet, it would have been obvious to one of ordinary skill in the art to stretch the polymer of Pelrine. Note that optimization of a known device for a particular application (e.g. thru routine

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experimentation) is within the skill expected of the routineer, and therefore would have been obvious to one of the new phraseology of claim 1 is not seen to exclude any pre-strain, regardless of nomen cloture (e.g. finished portion) from reading on the actual finished structure. The device is pre-strained prior to application of the drive voltage. Regarding previously 'allowable' claim 10, since "texture" only means not exactly Smooth, it would seem to read on any prior art polymer film commercially available.

Claims 24-26 and 53-59 are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

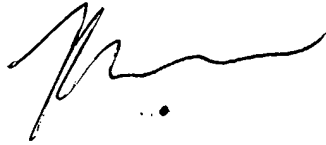
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M BUDD/pj

10/27/03

A handwritten signature in black ink, consisting of a stylized, cursive 'M' followed by a horizontal line and a small dot.